REMARKS

Claims 1-34 are pending in the present application. Claim 29 has been amended to make the claim more readable. Claims 1, 12, 18 and 29 are independent.

Rejections Under 35 U.S.C. § 112

Claim 29 has been rejected under 35 U.S.C. § 112, second paragraph, as having insufficient antecedent basis for the limitation "the constructed beam tree".

With regard to claim 29, Applicants assert that the rejection is now moot given the amendment to claim 29.

Accordingly, Applicant respectfully requests that the 35 U.S.C. § 112, second paragraph, rejection of claim 29 be withdrawn.

Rejections Under 35 U.S.C. § 103

Claims 1-4, 6-11, 18-21 and 23-28 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Nagamitsu et al. (U.S. Patent No. 5,467,401). Applicants respectfully traverse.

With regard to claim 1, Applicants assert that Nagamitsu et al. fail to disclose computing wave propagation paths from a source to other regions in a spatial environment in priority order as recited in claims 1 and 18. The Examiner admits on page 3 of the Official Action that Nagamitsu et al. do not expressly disclose priority order of computing wave propagation as claimed. However, the Examiner suggests that a practitioner in the art at the time of the invention *could have* found the disclosure of Nagamitsu et al. regarding the ordering of reflection of incident waves including weight assigned to arrival time, and computing wave responses for all incident waves for each direction to obviously imply the priority order of computing wave propagation in the claimed invention.

Initially, Applicants assert that whether a practitioner "could have" found Nagamitsu et. al to disclose the claimed invention is not sufficient to support a 35 U.S.C. § 103 as suggested by the Examiner. The standard under 35 U.S.C. § 103 is whether "the subject matter as a whole ***would have*** been obvious at the time the invention was made"[emphasis added]. See, e.g., *In re Brouwer*, 77 F.3d 422, 425, 37 USPQ2d 1663, 1666 (Fed. Cir. 1996) ("[T]he mere possibility that one of the esters or the active methlene group-containing compounds. . . could be modified or replaced such that its use would lead to the specific sulfoalkylated resin . . . does not make the process recited . . . obvious 'unless the prior art suggested the desirability of [such] a modification' or replacement.")(quoting *In re Gordon*, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984)). Applicant's assert that the rejection is improper because the Examiner asserts that a practitioner "could have" known to compute wave propagation paths as in the recited invention based on Nagamitsu et al., but fails to show that Nagamitsu et al. disclose a suggested desirability for such a modification or replacement.

Instead, the Examiner provides references to Col. 10, lines 2-11, lines 30-35, and lines 43-45 of Nagamitsu et al. as motivation. The reference discloses information regarding reflected sounds being divided into lower order reflections and higher order reflections. Applicants assert that the Examiner has failed to show how reflected sounds being divided into lower order reflections and higher order reflections as disclosed in Nagamitsu et al. is the same as computing wave propagation paths from a source to other regions in a spatial environment in priority order as recited in claims 1 and 18. This being so, Applicants assert that the disclosure (Col. 10, lines 2-11, lines 30-35, and lines 43-45) being applicable to reflected sounds is not applicable to computing wave propagation paths from a source to other regions in a spatial environment as recited in claims 1 and 18.

Claims 2-4, 6-11, 19-21 and 23-28 are allowable at least because they depend from one of independent claims 1 and 18. Accordingly, Applicants respectfully request that the Examiner withdraw the art grounds of rejection.

Claims 5 and 22 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Nagamitsu et al. as applied to claims 1 and 18 and further in view of Reed et al. (U.S. Patent 5,574,466). Applicants respectfully traverse.

As discussed above, Nagamitsu et al. fails to disclose or suggest computing wave propagation paths from a source to other regions in a spatial environment in priority order as recited in claims 1 and 18.

Reed et al. is directed to a method for wireless communication system planning that includes determining an image tree based on a transmitter location and the reflective and diffractive surfaces within a coverage region, and limiting the image tree to exclude branching for higher order images requiring more than a predetermined number of reflections and/or diffractions. Reed et al., however, is silent as to computing wave propagation paths in priority order. Therefore, Reed et al. can not disclose or suggest computing wave propagation paths from a source to other regions in a spatial environment in priority order as recited in claims 1 and 18. Claims 1 and 18 are not rendered obvious to one skilled in the art by Nagamitsu et al. in view of Reed et al.

Moreover, Applicants assert that there would be no motivation to combine Nagamitsu et al. with Reed et al. Nagamitsu et al. is directed to sound reflectivity whereas Reed et al. is directed to radio signal reflectivity. Applicants assert that one skilled in the art of sound reflectivity would not look to the radio signal reflectivity art to provide for the shortcomings of Nagamitsu et al.

Claims 5 and 22 are allowable for their own merits and because they depend from one of independent claims 1 and 18, which the Applicants assert have been shown to be allowable.

Claims 12-17 and 29-34 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Nagamitsu et al. in view of Reed et al. Applicants respectfully traverse.

With regard to independent claims 12 and 29, Applicants assert that Nagamitsu et al. and Reed et al., separately, or in any proper combination, fail to disclose constructing a data structure for each of a plurality of sources by bi-directionally tracing beams between pairs of said plurality of sources in said spatial environment as recited in claims 12 and 29. Instead, Nagamitsu et al. disclose a calculation method with respect to relations between: a sound source and each section; one section and another section; and each section and a sound receiving point (Col. 5, line 59 to Col. 6, line 12). Applicants assert that the calculation of Nagamitsu et al. is silent as to the bi-directionally tracing beams between pairs of a plurality of sources as recited in claims 12 and 29. Therefore, Nagamitsu et al. can not disclose or suggest constructing a data structure for each of a plurality of sources by bi-directionally tracing beams between pairs of said plurality of sources in said spatial environment as recited in claims 12 and 29.

Applicants assert that Reed et al. is also silent as to bi-directionally tracing beams between pairs of a plurality of sources. Therefore, Reed et al. can not disclose or suggest constructing a data structure for each of a plurality of sources by bi-directionally tracing beams between pairs of said plurality of sources in said spatial environment as recited in claims 12 and 29.

Moreover, Applicants assert that there would be no motivation to combine Nagamitsu et al. with Reed et al. Nagamitsu et al. is directed to sound reflectivity whereas Reed et al. is directed to radio signal reflectivity. Applicants assert that one skilled in the art of sound

reflectivity would not look to the radio signal reflectivity art to provide for the shortcomings of Nagamitsu et al.

Based on the foregoing, Applicants assert that claims 12 and 29 are not rendered obvious to one skilled in the art by Nagamitsu et al. in view of Reed et al.

Claims 13-17 and 30-34 are allowable because they depend from one of independent claims 12 and 29, which the Applicants assert have been shown to be allowable.

CONCLUSION

In view of the foregoing, Applicant submits that claims 1-34 are patentable over the relied upon references, and that the application as a whole is in condition for allowance. Early and favorable notice to that effect is respectfully solicited.

In the event that any matters remain at issue in the application, the Examiner is invited to contact the undersigned at (703) 668-8000 in the Northern Virginia area, for the purpose of a telephonic interview.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 08-0750 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

HARNESS, DICKEY & PIERCE, P.L.C.

By _____ Rey. # 48,781
For Gary D. Yacura
Reg. No. 35,416

P.O. Box 8910
Reston, VA 20195
(703) 668-8000

GDY/RFS:ewd